

that the white person is quite susceptible to filarial disease. This is specially so as regards Barbadoes, where persons, whether resident in the island all their lives, or only visiting it temporarily, often contract the disease; the rich and poor are alike in this respect.

Race.	Number Infected.	Non-Infected.	Infected.
Negroes	401	357	44
Mulattos	160	142	18
Whites	39	25	14
Total	600	524	76

Equal to 12.66 per cent.

In analysing the table, 27 or 4.5 per cent. of the total number examined, or 35.5 per cent. of the filarial cases, had definite pathological changes indicative of filarial disease such as elephantiasis, chyluria, filarial lymphangitis, etc.; whereas 49 of the filarial cases, or 8.1 per cent. of the total examined, had no symptoms whatever, the diagnosis being come to by the discovery of embryos in the blood. This latter class is a dangerous one as regards the spread of the disease, for it is manifest that unless sleeping under mosquito nets, which if they are negroes they never do, they nightly infect many mosquitos, which in turn infect other people and so spread the disease.

To get some idea of the number of infected mosquitos about, a series of dissections of 100 mosquitos, of the species *Culex fatigans* taken from the wards and corridors of the General Hospital, in which there were cases with embryo circulating in their blood was carried out. Of this number, 23 per cent. were found to be infected with filaria nocturna at various stages of development, and in one mature forms were found in the proboscis, thus showing the danger of being near infected people.

The question arises, What can be done for the prevention of filarial disease? Much has now been done and tried for the destruction of *Anopheles*, the malaria-bearing mosquito. Similar or modified methods should be carried out for all domestic mosquitos. Considering that their breeding places are confined to houses and their vicinity, this should not prove a task at all approaching in magnitude to the draining of large swamps or to treating them in other ways.

Taking Barbadoes as an example, as has already been stated, there is now a perfect water supply, and people can get their water fresh from the standpipes at their doors. Such being the case, old wells ought to be filled up; no water barrels or tubs should be allowed, or if kept they should be emptied every week or so. Tanks and collections of water in gardens should all be periodically treated with kerosene or be furnished with closely-fitting covers to prevent mosquitos getting in.

These methods are simple and inexpensive, and each householder should see that they are applied in his garden and grounds. The difficulty begins when one has to take into account the inability of the negro to grasp anything of a hygienic nature. The only way to get over this would be a system of sanitary inspection by a few competent men. For individual prophylaxis mosquito nets ought always to be used, but many, even educated, people still persist in sleeping without them; of course nothing in this line can be expected of the native population.

If such means were adopted for Barbadoes, the prevalence of filarial disease, which is at present quite alarming, could easily, with little trouble and expense, be greatly diminished, and thus save much suffering, as well as loss of time, hideous deformity, and, doubtless, in not a few instances, loss of life.

NOTE AND REFERENCES.

¹ This paper, forwarded by the Honorary Secretary of the Barbadoes Branch of the British Medical Association in reply to a request for the consideration of the resolutions re filariasis in Barbadoes passed in the Section of Tropical Diseases at the annual meeting at Cheltenham, is published by order of the Council. ² BRITISH MEDICAL JOURNAL, June 1st, 1901. ³ *The Geology of Barbados*, Harrison and Jukes Brown, 1890.

NOTE ON MEDIA FOR DISTINGUISHING B. COLI, B. TYPHOSUS AND RELATED SPECIES.

BY
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IN this brief note we take cognizance only of some recently described media and dyes of which we have made and tested several combinations.

During last summer one of us (A. S. G.) made some attempts to improve on the well-known MacConkey's medium (taurocholate-lactose-agar), which is still *facile princeps* of media for this kind of work. The addition of neutral red¹ to the solid medium was tried, and it was found that *B. coli* could then be easily distinguished by the crimson colour of its colonies. From the time when Rothberger introduced this dye it has been used by several observers in different combinations, but not, so far as we are aware, in lactose-containing media. We see no advantage in the addition of neutral red to glucose media. Lactose, from the fact that *B. coli* and its congeners are the only members of the group which decompose it with the formation of gas bubbles, we consider to be an essential ingredient of these differential media.

The other of us (E. H. H.) has recently been working with v. Drigalski and Conradi's medium with satisfactory results, but it seemed worth while to try various other combinations.

We may say at once that for ordinary working purposes MacConkey's medium with neutral red seems to give the best results, but for demonstration purposes a medium containing both neutral red and "Krystall-violett"² gives very striking and instructive pictures. The medium recommended has the following composition:

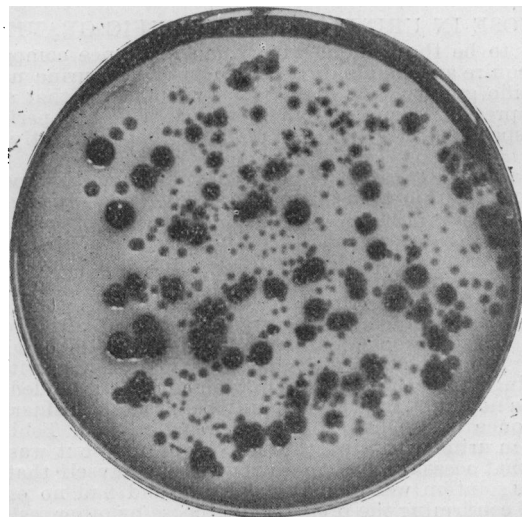
Agar	2 gram.
Pentone	2 "
Water	100 c.cm.

made alkaline to the extent of 0.4 c.cm. normal NaOH beyond the neutral (litmus) point.

To this when filtered and sterilized is added:

Sod. taurocholate (from ox bile)	0.5 gram.
Lactose	1.0 "
Half per cent. neutral red solution	1 c.cm.

and the whole heated in the Koch's sterilizer for fifteen minutes. This avoids decomposition of the lactose; and is, nevertheless, sufficient for sterilization.



Petri dish inoculated with bacillus coli (dark colonies) and bacillus typhosus (light colonies); observe darkening of medium around the colon colonies and the lightening of the same around the typhoid colonies.

The superficial inoculation of poured plates gives very good results, but the plates should not be poured until the day on which they are required. Only *B. coli* and other lactose fermenters (including *B. pyogenes fetidus*) grow as red colonies, colour the surrounding medium red and produce a

haze; all other similar forms (for example, *B. typhosus*, *B. paracolon*, etc.) are white, and colour the surrounding medium an amber or orange tint. These forms (except some strains of *B. typhosus*) all make milk alkaline finally, and the amber colour is probably due to a similar change.

The chief use of such a medium is, of course, for the examination of faeces, or anything—for example, water—in which the presence of intestinal bacteria is suspected. The taurocholate inhibits the growth of nearly all but intestinal bacteria, and the neutral red at once differentiates *B. coli* from other forms. We have tested the medium with *B. coli*, *B. typhosus*, *B. enteritidis*, *B. pyogenes fetidus*, and also with faeces, urine, and water.

"Krystall-violett" was used by v. Drigalski and Conradi for the same purpose—namely, as an inhibiting agent—as sodium taurocholate by MacConkey. We find that a lactose agar to which both neutral red and "Krystall-violett" (1-100,000) have been added, permits of a striking double stain of the colonies; *B. coli* is red, but *B. typhosus* (also *B. enteritidis* Gaertner, and others) are blue to purple. This effect is better seen after forty-eight than after twenty-four hours. The most typical plates are, of course, obtained when a known mixture of two bacteria—for example, *B. coli* and *B. typhosus*—is used. Very pretty results are also obtained on slant agar tubes, and neutral red lactose broth is also useful.

The appended photograph (p. 1473) shows well the difference between the (small light) typhoid colonies and the (large dark) colon colonies.

NOTES.

¹ Neutral red or toluylen-red is *as*-dimethyl-diamido-tolu-phenazin. The sample used was obtained from Grüber. ² "Krystall-violett" is one of the commercial forms of methyl-violet—namely, a methyl-triamido-triphenyl-methane. The particular sample used was kindly sent us by the Höchstear Farbwerte.

BIBLIOGRAPHY.

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MEMORANDA:

MEDICAL, SURGICAL, OBSTETRICAL, THERAPEUTICAL, PATHOLOGICAL, ETC.

GLUCOSE IN URINE OF LOW SPECIFIC GRAVITY.

It used to be the custom with some insurance companies not to require an examination for sugar in the urine unless the specific gravity were high. It is well known that sugar may be present in more than mere traces with a perfectly normal specific gravity, or even with one that is slightly sub-normal.

In an insurance case the other day I found the specific gravity of the urine to be barely 1004 when newly passed; it rose to 1007 after it had cooled down. I was astonished to get a very marked reaction with Fehling's solution, so marked that after standing for ten or fifteen minutes there was a copious precipitate of red cupric oxide at the bottom of the tube. I confirmed this result with the safranin test, and then proceeded to the phenylhydrazine hydrochloride method, obtaining plentiful and typical crystals of glucosazone. The urine was unfortunately thrown away without my making a quantitative examination as I had intended, but there was no doubt as to the amount being very considerable. I have once before had a distinct reaction with Fehling's solution in urine with a specific gravity of 1005, but was not able on that occasion to do more than assure myself that the Fehling's solution was in good condition, and had no opportunity of confirming the presence of glucose by other tests.

Cornhill, E.C.

S. W. CARRUTHERS, M.D.

THE Guy's Hospital Biennial festival of past and present students will take place in the Whitehall Rooms, Hotel Metropole, on Tuesday, July 1st, when the chair will be taken by Dr. A. L. Galabin. Applications for tickets should be made to the Honorary Secretary, Dr. G. Newton Pitt, 15, Portland Place, W.

REPORTS

ON

MEDICAL AND SURGICAL PRACTICE IN THE
HOSPITALS AND ASYLUMS OF THE
BRITISH EMPIRE.

STOCKTON HOSPITAL.

CASE OF INTESTINAL OBSTRUCTION: ARTIFICIAL ANUS:
SUBSEQUENT SHORT-CIRCUITING OF BOWEL.

(By T. RUDOLPH SMITH, M.B., B.C.Camb., F.R.C.S.Eng.)

History and State on Examination.—M. P., aged 32, female, married, was on November 5th, 1901, rather suddenly seized with gripping pain in the abdomen, and vomited. Enemata resulted in the passage of a little flatus only. On November 9th, 1901, when I first saw her, I found her in a very exhausted condition, vomiting brownish fluid frequently. The abdomen was moderately distended, and the bowels could be seen contracting during the attacks of pain. The rectum was empty and dilated; enemata returned unchanged. She was removed to the Stockton Hospital at once for operation.

Previous History.—She had had two difficult labours, terminated by forceps, the children being still born. Subsequently, two years ago, a miscarriage occurred at the third month followed by a pelvic abscess, which discharged for several months by the rectum and then cleared up. Since then she had had occasional attacks of pain with increasing difficulty in getting the bowels to act.

Operation.—Under an anaesthetic (with the assistance of Dr. Talbot) the abdomen was opened in the middle line between the pubes and umbilicus. Distended small intestine presented, and could be traced down into pelvis, where it was bound down in dense cicatricial tissue behind the uterus, which was double the normal size and very hard. Passing up from the pelvis was collapsed small intestine ending in the caecum. Her condition was so critical that the distended small gut was sewn into the abdominal wound and opened at once, a glass tube being tied in.

Progress.—For a time she improved, faeces passing freely by the opening. Then the skin became very sore all over the front of the abdomen from the irritation of the bowel contents. She was in constant pain, and lost ground steadily.

Second Operation.—December 5th, 1901. Under an anaesthetic the abdomen was opened by an incision parallel to and an inch to the right of the artificial anus. The bowel was transversely divided 2 in. above the artificial anus, and the lower cut end invaginated and sewn up. The upper cut end was then sewn into a lateral incision in the ascending colon, about 3 in. from the caecum, continuous silk sutures being used to unite the mucous coats and interrupted sutures the peritoneal coats. The patient was much collapsed all through the operation, requiring several injections of strychnine, and, finally, an intravenous saline injection.

After-Progress.—Flatus passed naturally on the second day, and the bowels acted on the fifth day. Solid food was given on the fourteenth day. The incision healed by first intention, and the skin, which was quite raw all over the abdomen at the time of operation, rapidly recovered its normal condition. In three weeks and a-half the patient returned home.

On February 12th, 1902, she had put on flesh and was free from pain, and was going about as usual. The artificial anus showed no signs of contracting. But it gave no trouble, as there was nothing but a little mucus secreted, from the exposed bowel mucous membrane. The bowels acted naturally three or four times a day; the motions were very soft, but there was no undigested food in them.

REMARKS.—The second operation had to be performed under unfavourable conditions, owing to the exhaustion produced by the constant pain following the digestive action of the bowel contents on the skin of the abdomen. To prevent this absolutely became of primary importance, and therefore the bowel was completely divided above the artificial anus in preference to a lateral anastomosis. The importance of completing the operation as quickly as possible made it inadvisable to attempt to estimate accurately the length of bowel short-circuited. But judging from the present looseness of the bowels it was of considerable extent.